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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/636,149 | 08/07/2003 | Ralf Geiger | 3827 | 1801 |

7590 04/18/2007
GLENN PATENT GROUP
Suite L
3475 Edison Way
Menlo Park, CA 94025

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| EXAMINER |
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LENNOX, NATALIE

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| ART UNIT | PAPER NUMBER |
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2609

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/18/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/636,149 | Applicant(s) GEIGER ET AL. | |
| | Examiner Natalie Lennox | Art Unit 2609 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 1-16 and 18-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/06/2003, 12/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figs. 1a and 8 have missing identification numbers. For Fig. 1a the first block "means for generating sub-scaling layers" should be identified as block 102, according to the specification. Also, for Fig. 8, block labeled "Psycho-acoustic model" should be identified as block 84, according to the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: On page 18, line 19 cites "a third scaling layer 114," where it should be layer **113** instead. Also on page 19, line 3 shows the sub-scaling layers of layer 113, where it says "113v" should be **113b**. On page 20, line 23 cites "a first scaling layer 107" referring to Fig. 1b, however there is no scaling layer 107, the first scaling layer should be **111**, according to the drawing. On the same page 20, line 28 cites "second scaling layer 112 from Fig. 2" and there is no scaling layer on Fig. 2, it should read layer 112 from **Fig. 1b**. Same page 20, line 33 cites "...in Fig. 2, the third bit layer 113," it should be more specific and read "layer 113 **from Fig. 1.**" On page 28, the first line reads "psycho-acoustic model 4," the number should be **84**. Also on page 28, line 16 cites "the means 132 for generating sub-scaling layers," the means for generating sub-scaling layers comes from Fig. 1a where the block representing the means, as stated above, should be identified as block **102**, and the correction should read "the means 102 from Fig. 1a for generating sub-scaling layers." Appropriate correction is required.

Claim Objections

3. Claims 1-16 and 19 are objected to because of the following informalities: Claims 1, 14, 15, and 19 contain numbers that represent specific values. These values should have quotation marks in order for them to be distinguished from the claim numbers such as it was done on claim 4 with the values "+1," "0," and "-1." Appropriate correction is required.

4. Claim 15 is objected to because of the following informalities: Claim 15 cites the limitation "m" in the first line. There is an incorrect dependency since this claim is dependent from claim 1, but claim 1 does not contain the limitation "m". However examiner noted that the limitation "m" is present in claim 14. For purposes of examination, examiner will treat claim 15 as being dependent on claim 14. Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21 and 22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With respect to claims 21 and 22, applicant claims a computer program having program and computer codes. This subject matter is not limited to that which falls within a statutory category of invention because it is not limited to a process, machine, manufacture, or a composition of matter. Computer programs *per se* are non-patentable subject matter.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (hereinafter AAPA) in view of Hutzelmann et al. (US Patent 6,853,650).

As per claims 17 and 20, AAPA teaches an apparatus and method for scalable decoding an encoded signal comprising a first and a second scaling layer, with the first scaling layer comprising bits of a certain order of a first number of binary spectral value in a band, with the second scaling layer comprising bits of the certain order of a second number of binary spectral values in the band, and with the second number comprising at least one spectral value not contained in the first number, the apparatus comprising:

means (704) for extracting the first scaling layer from the encoded signal and the second scaling layer from the encoded signal (AAPA's Figs. 8 and 9); and

means for processing the first scaling layer and the second scaling layer so as to determine the bits of the certain order of the binary quantized spectral values in the band (AAPA's Figs. 8 and 9).

However, AAPA doesn't teach the encoded signal comprising a first sub-scaling layer and a second sub-scaling layer. Hutzelmann et al. teaches a network connecting unit that comprises a device for gathering information on network conditions in the second network (second network is connected to a second terminal where the decoder is found, Hutzelmann et al.'s Col. 3, lines 44-45); and a device for communicating this information over a feedback channel from the network connecting unit to the first terminal (first terminal has the encoder and is connected to first network, Hutzelmann et al.'s Col. 3, lines 38-39) so that it can respond by controlling the number of data layers

generated by the encoder and/or by performing a subdivision of a data layer into a plurality of subscaling layers (Hutzelmann et al.'s Col. 3, lines 55-62).

It would have been obvious to one having ordinary skill in the art to have combined the feature of an encoder performing a subdivision of a data layer into a plurality of subscaling layers as taught by Hutzelmann et al. for AAPA's apparatus for scalable decoding because Hutzelmann et al. provides communication systems and, in particular, multiscalable communication networks in which, irrespective of the specific network conditions, an efficient transnetwork communication can be achieved by providing and processing a scaled data flow (Hutzelmann et al's Col. 1, lines 14-18).

8. Claim 22 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) as modified by Hutzelmann et al. (US Patent 6,853,650), and further in view of Park et al. (US Patent 6,349,284).

As per claim 22, AAPA as modified by Hutzelmann et al., teach the method of claim 19, but don't specifically mention a computer program having a program code for carrying out the method in accordance with claim 19, when the program executes on a computer. However, Park et al. teaches a scalable audio encoding and decoding method and apparatus that codes audio signals into a layered datastream having a base layer and enhancement layers that may be embodied in a general purpose digital computer that is running a program from a computer usable medium, including but not limited to storage media such as magnetic storage media, optically readable media, and carrier waves (Col. 4, lines 7-18).

It would have been obvious to one having ordinary skill in the art to have used the feature of a computer program as taught by Park et al. for AAPA as modified above because Park et al. provides a method and apparatus for scalable encoding and decoding of audio signals (Col. 1, lines 10-13).

Allowable Subject Matter

9. Claims 1-16 and 19 are allowable if rewritten to overcome the claims objections.

10. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per claims 1 and 19, there is no prior art reference, alone or in combination, that specifically teaches or suggests the limitation of a first sub-scaling layer containing "bits of a certain order for a first number of the binary spectral values in a band, with the first number being greater or equal to "1" and less than a total number of the binary spectral values in the band" or a second sub-scaling layer containing "bits of a certain order of a second number of the binary spectral values, [...] where the second number is greater than or equal to "1" and less than a total number of the binary spectral values in the band [...] such that the number comprises at least one binary spectral value which is not contained in the first number of the binary spectral values" as cited in the claim. Prior art made of record, Park et al. (US Patent 6,349,284) Col. 10, lines 14-19, teach a layer, such as a base layer or an enhancement layer, containing bits of a certain order, for example, the base layer may contain the most significant bits (MSB) of frequency components and the next enhancement layer contain the next upper

significant bits, but they don't specifically mention those layers being subdivided into a plurality of subscaling layers each containing the bits for a specific number different from the number of another subscaling layer or even that the value of those numbers being equal to "1" and less than the total number of the binary spectral values in the band. Also the publication "Multi-Layer Bit Sliced Bit Rate Scalable Audio Coder", 103. AES Convention, pre-print No. 4520, 1997, under Chapter 2 "Bit-Sliced Scalable System," teaches a base layer containing the absolute value and the sign bit of the quantized spectral data encoded from MSB to least significant bit (LSB) and from low to high frequency, where the used bits sum to the total bits and where the encoding stops when the total bits are larger than or equal to the available bits for the layer. The next enhancement layer is coded the same way using the remaining bit patterns not encoded in the base layer. This reference differs from applicant's claim invention in that it doesn't subdivide the layers into sublayers and in that the bitstream for each layer has bits from different orders. Also there is no prior art reference, alone or in combination, that specifically teaches or suggests the limitation that the encoded signal is "implemented so as to include the first subscaling layer and the second subscaling layer such, [...] that the first and the second subscaling layer are separately decodable from each other" as cited in the claim. Both the prior art of record as described above (Park et al. and AES Convention publication "Multi-Layer Bit Sliced Bit Rate Scalable Audio Coder") teach an encoded signal comprised of a base layer and one or more enhancement layers, where the decoding process for this encoded signal decodes each layer separately starting with the base layer and followed by the next enhancement

layer (in Park et al.'s Col. 11, lines 28-31 and in "Multi-Layer Bit Sliced Bit Rate Scalable Audio Coder" under Chapter 2.6 "Decoding"). Both these references differ from what applicant is claiming in that, even though the layers are decoded separately, the decoding process is done on a layer basis and applicant's decoding is done on a sublayer basis.

As per claim 18, there is no prior art reference, alone or in combination, that specifically teaches or suggests the limitation of a "first number of the binary spectral values for the first subscaling layer [being] selected so as to achieve a maximum precision gain for a band" as cited in the claim. Prior art made of record, the publication "Multi-Layer Bit Sliced Bit Rate Scalable Audio Coder", 103. AES Convention, pre-print No. 4520, 1997, under Chapter 2 "Bit-Sliced Scalable System," teaches a base layer containing the absolute value and the sign bit of the quantized spectral data encoded from MSB to least significant bit (LSB) and from low to high frequency, where the used bits sums to the total bits and where the encoding stops when the total bits are larger than or equal to the available bits for the layer. This reference differs from what applicant is claiming because it doesn't specifically mention the quantized spectral data being selected as to achieve a maximum precision gain for the band. Also there is no prior art reference, alone or in combination, that specifically teaches or suggests the limitation of "the first subscaling layer [being extracted] prior to the second sub-scaling layer" as cited in the claim. In "Multi-Layer Bit Sliced Bit Rate Scalable Audio Coder, under Chapter 2.6 "Decoding," the reference teaches that an encoded signal comprised of a base layer and one or more enhancement layers, where the decoding process for

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this encoded signal decodes each layer separately starting with the base layer and followed by the next enhancement layer. This reference differs from what applicant claims in that the extraction is done on a layer basis and not on a sublayer basis.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 7:30 am - 5:00 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571) 272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NL 04/13/2007


XIAO WU
SUPERVISORY PATENT EXAMINER